

Remarks

The Office Action mailed May 15, 2007 has been reviewed and the following remarks have been made in consequence thereof.

Claims 1-19 are now pending in this application. Claims 1-19 stand rejected.

In accordance with 37 C.F.R. 1.136(a), a three-month extension of time is submitted herewith to extend the due date of the response to the Office Action dated May 15, 2007 for the above-identified patent application from August 15, 2007 through and including November 15, 2007. In accordance with 37 C.F.R. 1.17(a)(3), authorization to charge a deposit account in the amount of \$1050.00 to cover this extension of time request also is submitted herewith.

The Office Action does not indicate whether the drawings filed on March 25, 2004 have been accepted by the Examiner. Applicant respectfully requests that the Examiner indicate their acceptance or rejection.

The rejection of Claims 1, 2, and 6-9 under 35 U.S.C. § 102(b) as being anticipated by Hossack et al. (U.S. Patent Application Publication No. 2002/0120195) is respectfully traversed.

Hossack et al. describe a medical diagnostic ultrasound imaging method and system. The system includes a plurality of Doppler cross-correlators that can be used to correlate successive lines fired along one acoustic line direction (paragraph 100). The system also includes a plurality of Doppler processors that are used to measure pulse to pulse decorrelation (paragraph 102). The system is used to acquire a plurality of images in respective image planes (paragraph 176). Notably, Hossack et al. does not describe nor suggest that one of the successive acoustic lines is acquired before providing medical treatment to a subject and the other one of the successive acoustic lines is acquired after providing medical treatment.

Claim 1 recites an ultrasonic imaging method comprising the steps of "storing a reference image and a scan condition used to acquire the reference image; reading said reference image and said scan condition; acquiring a real-time image by setting said scan condition, wherein said reference image is acquired before providing

medical treatment to a subject and said real-time image is acquired after providing medical treatment to the subject; and displaying said reference image and said real-time image side by side.”

Hossack et al. do not describe nor suggest an ultrasonic imaging method as recited in Claim 1. Specifically, Hossack et al. do not describe nor suggest storing a reference image and a scan condition used to acquire the reference image, acquiring a real-time image by setting the scan condition, wherein the reference image is acquired before providing medical treatment to a subject and wherein the real-time image is acquired after providing medical treatment to the subject. Rather, Hossack et al. describe correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes. A description of correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes does not describe nor suggest that the reference image is acquired before providing medical treatment to a subject and the real-time image is acquired after providing medical treatment to the subject. Accordingly, Hossack et al. do not describe nor suggest that the reference image is acquired before providing medical treatment to a subject and the real-time image is acquired after providing medical treatment to the subject. For the reasons set forth above, Claim 1 is submitted to be patentable over Hossack et al.

Claims 2 and 6-8 depend from independent Claim 1. When the recitations of Claims 2 and 6-8 are considered in combination with the recitations of Claim 1, Applicants submit that Claims 2 and 6-8 likewise is patentable over Hossack et al.

Claim 9 recites an ultrasonic diagnostic apparatus comprising “an ultrasonic probe; a transmitting/receiving device for driving said ultrasonic probe to transmit ultrasonic pulses into a subject and receive ultrasonic echoes from inside the subject and outputting received data; an ultrasonic image producing device for producing an ultrasonic reference image from the resulting received data, wherein said ultrasonic image producing device is configured to produce a real-time image; a reference image storage device for storing the reference image; a scan condition storage device for storing a scan condition for the reference image; an automatic scan condition setting device for reading said scan condition and setting the scan condition, wherein said

reference and real-time images are acquired by setting said scan condition, and wherein said reference image is acquired before a medical treatment of the subject and said real-time image is acquired after the medical treatment; and an ultrasonic image display device for reading said reference image and displaying said reference image and a real-time image side by side.”

Hossack et al. do not describe nor suggest an ultrasonic diagnostic apparatus as recited in Claim 9. Specifically, Hossack et al. do not describe nor suggest an ultrasonic image producing device for producing an ultrasonic reference image from the resulting received data, wherein the ultrasonic image producing device is configured to produce a real-time image, wherein the reference and real-time images are acquired by setting the scan condition, wherein the reference image is acquired before a medical treatment of the subject and the real-time image is acquired after the medical treatment, and an ultrasonic image display device for reading the reference image and displaying the reference image and a real-time image side by side. Rather, Hossack et al. describe correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes. A description of correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes does not describe nor suggest that the reference image is acquired before a medical treatment of the subject and the real-time image is acquired after the medical treatment, wherein the reference and real-time images are acquired by setting the scan condition. Accordingly, Hossack et al. do not describe nor suggest that the reference image is acquired before a medical treatment of the subject and the real-time image is acquired after the medical treatment. For the reasons set forth above, Claim 9 is submitted to be patentable over Hossack et al.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1, 2, and 6-9 be withdrawn.

The rejection of Claims 3-5, 10-12, and 13-19 under 35 U.S.C. § 103(a) as being unpatentable over Hossack et al. is respectfully traversed.

Hossack et al. is described above.

Claims 3-5 depend indirectly from independent Claim 1, which is recited above.

Hossack et al. do not describe nor suggest an ultrasonic imaging method as recited in Claim 1. Specifically, Hossack et al. do not describe nor suggest storing a reference image and a scan condition used to acquire the reference image, acquiring a real-time image by setting the scan condition, wherein the reference image is acquired before providing medical treatment to a subject and the real-time image is acquired after providing medical treatment to the subject, and displaying the reference image and the real-time image side by side. Rather, Hossack et al. describe correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes. A description of correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes does not describe nor suggest that the reference image is acquired before providing medical treatment to a subject and the real-time image is acquired after providing medical treatment to the subject. Accordingly, Hossack et al. do not describe nor suggest that the reference image is acquired before providing medical treatment to a subject and the real-time image is acquired after providing medical treatment to the subject. For the reasons set forth above, Claim 1 is submitted to be patentable over Hossack et al.

When the recitations of Claims 3-5 are considered in combination with the recitations of Claim 1, Applicants submit that Claims 3-5 likewise are patentable over Hossack et al.

Claim 10 depends from independent Claim 9, which is recited above.

Hossack et al. do not describe nor suggest an ultrasonic diagnostic apparatus as recited in Claim 9. Specifically, Hossack et al. do not describe nor suggest an ultrasonic image producing device for producing an ultrasonic reference image from the resulting received data, wherein the ultrasonic image producing device is configured to produce a real-time image, wherein the reference and real-time images are acquired by setting the scan condition, wherein the reference image is acquired before a medical treatment of the subject and the real-time image is acquired after the

medical treatment, and an ultrasonic image display device for reading the reference image and displaying the reference image and a real-time image side by side. Rather, Hossack et al. describe correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes. A description of correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes does not describe nor suggest that the reference image is acquired before a medical treatment of the subject and the real-time image is acquired after the medical treatment, wherein the reference and real-time images are acquired by setting the scan condition. Accordingly, Hossack et al. do not describe nor suggest that the reference image is acquired before a medical treatment of the subject and the real-time image is acquired after the medical treatment. For the reasons set forth above, Claim 9 is submitted to be patentable over Hossack et al.

Claims 10 and 16-19 depend from independent Claim 9. When the recitations of Claims 10 and 16-19 are considered in combination with the recitations of Claim 9, Applicants submit that Claims 10 and 16-19 likewise are patentable over Hossack et al.

Claim 11 recites an ultrasonic diagnostic apparatus comprising “an ultrasonic probe; a transmitting/receiving device for driving said ultrasonic probe to transmit ultrasonic pulses into a subject and receive ultrasonic echoes from inside the subject and outputting received data; an ultrasonic image producing device for producing an ultrasonic reference image from the resulting received data; a reference image storage device for storing the reference image; a scan condition storage device for storing a scan condition for the reference image; an automatic scan condition setting device for reading said scan condition and setting said scan condition; a scan plane angular scanning device for acquiring a plurality of real-time images at different scan plane angles, wherein said reference image is acquired before providing a medical treatment to the subject and one of said real-time images is acquired after providing the medical treatment; a correlation coefficient calculating device for calculating a correlation coefficient between said reference image and each of said real-time images throughout or partially; and an ultrasonic image display device for displaying said

reference image and one of said real-time images having the highest correlation coefficient side by side.”

Hossack et al. do not describe nor suggest an ultrasonic diagnostic apparatus as recited in Claim 11. Specifically, Hossack et al. do not describe nor suggest an ultrasonic image producing device for producing an ultrasonic reference image from the resulting received data, a scan plane angular scanning device for acquiring a plurality of real-time images at different scan plane angles, wherein the reference image is acquired before providing a medical treatment to the subject and one of the real-time images is acquired after providing the medical treatment. Rather, Hossack et al. describe correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes. A description of correlating successive lines fired along one acoustic line direction, measuring pulse to pulse decorrelation, and acquiring a plurality of images in respective image planes does not describe nor suggest that the reference image is acquired before providing a medical treatment to the subject and one of the real-time images is acquired after providing the medical treatment. Accordingly, Hossack et al. do not describe nor suggest that the reference image is acquired before providing a medical treatment to the subject and one of the real-time images is acquired after providing the medical treatment. For the reasons set forth above, Claim 11 is submitted to be patentable over Hossack et al.

Claims 12-15 depend from independent Claim 11. When the recitations of Claims 12-15 are considered in combination with the recitations of Claim 11, Applicants submit that Claims 12-15 likewise are patentable over Hossack et al.

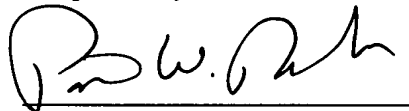
In addition, Applicants respectfully submit that the Section 103 rejection of Claims 3-5, 10-12, and 13-19 is not a proper rejection. As is well established, the mere assertion that it would have been obvious to one of ordinary skill in the art to have modified Hossack et al. to obtain the claimed recitations of the present invention does not support a prima facie obvious rejection. Rather, each allegation of what would have been an obvious matter of design choice must always be supported by citation to some reference work recognized as standard in the pertinent art and the Applicants given the opportunity to challenge the correctness of the assertion or the notoriety or reputation of the cited reference. Applicants have not been provided with the

citation to any reference supporting the combination made in the rejection. The rejection, therefore, fails to provide the Applicants with a fair opportunity to respond to the rejection, and fails to provide the Applicants with the opportunity to challenge the correctness of the rejection. Of course, such combinations are impermissible.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 3-5, 10-12, and 13-19 be withdrawn.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'P. W. Rasche', is written over a horizontal line.

Patrick W. Rasche

Registration No. 37,916

ARMSTRONG TEASDALE LLP

One Metropolitan Square, Suite 2600

St. Louis, Missouri 63102-2740

(314) 621-5070